

**Remarks:**

Reconsideration of the application is respectfully requested.

Claims 1, 5, 7 - 11 and 22 - 24 are presently pending in the application.

The drawings were objected because Figures 1 and 2 both reference the same symbol "δ". Figs. 1 and 2 have been amended to each include the symbol "θ". Included herewith is a new sheet showing the amended Figs. 1 and 2. Applicant has additionally included a redlined sheet showing the changes made to Figs. 1 and 2.

Additionally, the drawings were objected to in the Office Action as allegedly not showing the "gears" of claim 8. Fig. 4 has been added to the present application. Fig. 4 is a side elevational view showing the gears 15 and 15', which are part of the drive mechanisms 5 and 5', respectively. The gears 15, 15' are driven by motors 17, 17'. It is believed that no new matter has been added by way of the present amendments. The material shown in Fig. 4 is fully supported by the original specification on page 3, lines 9 - 14, on page 7, line 23 - page 8, line 2 and in original claim 8.

The specification has been amended to make proper reference to amended Figs. 1 and 2 and to the newly added Fig. 4.

In paragraphs 5 - 6 of the above-identified Office Action, claims 1, 5, 7 - 11 and 22 - 24 were rejected as allegedly being indefinite under 35 U.S.C. § 112, second paragraph. More specifically, in the Office Action it is stated that claims 1 and 10, paragraphs 3 and 5, respectively, include the phrase "said subframe controlling a position of said cylinders in regard to the ribbon and therefore controlling a cutting length of the ribbon". More specifically, the Office Action questions:

"how the subframe controls the position of the cylinders and the length of the cut when it is clearly the control unit that controls all movement."

Applicants' respectfully disagree with the statement made in the Office Action. Applicants' point to the following limitation in independent claims 1 and 10:

"said subframe controlling a position of said cylinders in regard to the ribbon and therefore controlling a cutting length of the ribbon"

in combination with the claim limitation of each of independent claims 1 and 10 which recites some form of a subframe having a pivot point, the subframe being pivotable about the pivot point. In combination, these claim limitations recited that it is the subframe carrying the cylinders that mechanically controls the position of the

cylinders relative to the ribbon on the basis of the pivotal movement. Due to this pivotal movement, or, in other words, the corresponding different angles at which the cylinders are positioned relative to the running direction of the web, the cutting length of the signature of the ribbon is controlled. More simply, as the subframe carrying the cylinders is pivoted about a pivot point, the angle of the cylinder relative to the web is altered, and, thus, the cutting length is controlled.

It is accordingly believed that the claims meet the requirements of 35 U.S.C. § 112, second paragraph.

In paragraph 8 of the above-identified Office Action, claims 1, 5, 7 - 11 and 22 - 24 were rejected as allegedly being obvious under 35 U.S.C. § 103(a) by French Patent No. 470,543 to Bourdin ("BOURDIN") in view of two references to Spengler, U. S. Patent Nos. 3,859,879 ("SPENGLER1") and 4,014,234 ("SPENGLER2") (collectively "SPENGLER") further in view of U. S. Patent No. 5,526,726 to Shore et al ("SHORE").

Applicants respectfully traverse the above rejections, as they apply to the present claims.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claims 1 recites, among other limitations,

"a control unit connected to and controlling said further drive and said one drive for controlling a rotational speed of said first cutting cylinder;"  
[emphasis added by Applicants]

Claim 10 recites a similar limitation. Note that the recited control unit must control **both** the further drive and the one drive. This is so that the two units can be controlled together, so that when the angle of the subframe is changed, the speed of the rotation can be correspondingly changed. This is supported in the instant application on page 8, lines 5 - 11, which state:

"If the angle  $\alpha$  of the cylinders 2, 3 in relationship to the ribbon 1 is decreased (the cylinders 2, 3 are oriented more parallel to the ribbon 1), the cylinders 2, 3 are rotated faster for a given press speed to maintain a straight cut."

Thus Applicants' recited **control unit** plays an important part by controlling **both** the claimed one drive for setting the speed of the cylinders and the claimed further drive for changing the angle of the subframe.

Further, Applicants' claims require, among other limitations,

"a pair of cylinders disposed opposite one another with a gap formed there-between for receiving a ribbon on a travel path, said pair of cylinders including a first cutting cylinder having a periphery with a cutting knife disposed helically about said periphery and a second cylinder;" [emphasis added by Applicants]

Due to the helical knife extending across the whole roller in the present invention, at any given point of contact, only one cut is being made by the Applicants' knife. Applicants' claimed cutting knife, in fact, acts as a single knife, making a single cut. This is supported in the specification, where the presently claimed invention is contrasted with other devices that make multiple cuts each time. More specifically, on page, 10, lines 12 - 15 of the instant application, it is stated:

"The nature of the cutting process represents two of the virtues of the invention. First, **and unlike most folders that cut all at once between the rotating cylinders**, the cutting process can be spread over as much time as desired." [emphasis added by Applicants]

See also, Figs. 1 and 2; and the discussion of "a point of contact" on page 3, lines 6 - 12, page 5, lines 6 - 10 and on page 7, lines 12 - 18, wherein the point of contact is referred to as "a point of cutting".

Contrary to Applicants' claimed invention, the blade of BOURDIN is wound in a spiral forming multiple, helical blades. As such, in the system of the BOURDIN reference, at any point

of contact on the ribbon material, **multiple cuts** are being made because the blade of **BOURDIN** is acting as **multiple helical knives**. **BOURDIN** is one of these systems that "cut all at once" from which the Applicants contrast the present invention in the instant application.

More specifically, contrary to Applicants' claimed invention **BOURDIN** discloses a system with **at least two helical knives** which cooperate with associated grooves in the second cutting roller, in order to provide **a plurality of parallel strips** which are always arranged **obliquely** to the web transport direction.

Additionally, **BOURDIN** solely teaches to provide a plurality of parallel strips. As such, there can not be any teaching to **change the length of a signature** by altering the speed and the angle of the cutting knives. Moreover, the device of **BOURDIN** is not able to provide cuts which are perpendicular to the web transport direction. Thus, **BOURDIN** does not teach generating signatures from a running web.

As such, Applicants' believe that the pending claims are patentable over the **BOURDIN** reference.

The **SPENGLER** references additionally fail to teach or suggest Applicants' claimed invention. **SPENGLER1** discloses a cutting apparatus for a **sheet** material, not a running **web** (i.e., Applicants' claimed "ribbon on a travel path"). Note in **SPENGLER1**, the use of the feed in conveyer and discharge conveyer and the endless band 17 around rollers 14, 15 and 18 and the sheet shown in Fig. 4.

Although **SPENGLER1** teaches altering the angle of a pair of cutting rollers, there is no teaching of any control unit. There is, further, no teaching or suggestion in **SPENGLER1** of any way of controlling the length of a signature by altering a rotational speed of the cutting roller 21, **which also** changes the angle at which the cutting roller 21 is positioned relative to the traveling direction of the sheet.

Thus, Applicants' submit that the **SPENGLER1** reference does not provide any teaching or suggestion of a cutting device for a **moving web**, which allows the length of the **signatures** to be altered. **SPENGLER1** certainly doesn't teach or suggest Applicants' claimed invention that changes the length of a signature cut from a **ribbon**, which includes a control unit that controls **both** the speed of the cutting cylinders **and** the angle of the subframe.

As such, Applicants' believe that the pending claims are patentable over the SPENGLER1 reference.

SPENGLER2, like SPENGLER1, discloses a device for severing sheet material (col. 1, line 10) by means of a cutting roller. Contrary to the present invention, the system of SPENGLER2 is intermittently driven by means of a clutch 10 and brake 11/12 "which may be signal controlled". See SPENGLER2, col. 1, lines 59 - 63.

SPENGLER2 discloses in col. 2, lines 43 - 47, to vary the length of the sheet material to be cut by controlling the clutch and the brake so that the cutting roller is positively driven for a predetermined duration. See also, Col. 1, lines 64 - 68 ("to provide a drive mechanism which will continuously advance the sheet material to be cut and which will intermittently drive the cutting roller, whereby the length of the cut pieces may be controlled by varying the duration of the drive of the cutting rollers;" ).

The control of the clutch and brake in SPENGLER2 is discussed in col. 5, lines 40 - 52, which uses a digital control device for carrying out a programmed sequence of steps. SPENGLER2 doesn't disclose the use of sensors. SPENGLER2, goes on to state:



"Further, the particular type of control of the operation of the apparatus especially of the clutch and [sic] brake means will depend on the particular type of cutting to be performed and the control as such is not part of the present invention."

In **SPENGLER2**, there is no teaching or suggestion in to sever a running material web and alter the length of the severed signatures by controlling the angle of the cutting cylinder and the angular speed of the cutting rollers, as required by Applicants' claims.

As such, Applicants' believe that the pending claims are patentable over the **SPENGLER2** reference.

Further, neither **BOURDIN** or **SPENGLER** teach or suggest using Applicants' claimed control unit and sensor arrangement (i.e., in the travel path of a web), in order to monitor the cutting operation and to control one drive for varying the speed of the cutting cylinders and another drive for pivoting a subframe about its pivot point.

The **SHORE** reference is cited in the Office Action for its sole disclosure its background section, of:

"Conventionally, the front and back ends of hot rolled rods are trimmed by shears located along the rolling line in advance of the finishing stands, where the product is moving at slower speeds. Some trimming shears operate intermittently, whereas others operate

continuously. Intermittently operable shears necessarily require complex control systems which precisely position the shear blades during each cut in response to rod end position signals generated by sensors located along the rolling line. From the standpoint of control complexity, continuously operating shears such as disc shears are far less demanding, but they commonly produce sharply oblique cuts with undesirable jagged ends." [emphasis added by Applicants]

However, **SHORE** certainly doesn't teach or suggest using a control unit to change the speed of cutting cylinders, or to change the angle of a subframe or to sever a running web. As such, the **SHORE** reference cannot be used to teach or suggest, the elements of Applicants' claimed invention that are missing from **BOURDIN** and **SPENGLER**.

In accordance with the foregoing, none of **BOURDIN**, **SPENGLER** or **SHORE**, taken alone or in combination, provides any teaching or suggestion of, among other limitations of Applicants' claims, changing the cut-off length of a running, **endless** web by altering the angle of a cutting cylinder carrying a helical knife relative to the web, and by changing the rotational speed of the cutting cylinder.

As such, it is accordingly believed that none of the references, whether taken alone or in any combination, either teach or suggest the features of Applicants' independent claims 1 and 10. Claims 1 and 10 are, therefore, believed to

be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1 and 10. As it is believed that the claims were patentable over the cited art in their original form, the claims have not been amended to overcome the references.

In view of the foregoing, reconsideration and allowance of claims 1,5, 7 - 11 and 22 - 24 are solicited.

In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out.

Additionally, please consider the present as a petition for a one month extension of time, and please provide a two (2) month extension of time, to and including, December 26, 2004, to respond to the present Office Action.

The extension fee for response within a period of two months pursuant to Section 1.136(a) in the amount of \$450.00 in accordance with Section 1.17 is enclosed herewith.

Applic. No. 09/758,299  
Response Dated December 24, 2004  
Responsive to Office Action of July 26, 2004

Please provide any additional extensions of time that may be necessary and charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

  
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For Applicants

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December 27, 2004

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Amendments to the Drawings:

Figs. 1 and 2 have been amended for better clarity. More specifically, the symbol " $\partial$ ", extended between both Figs. 1 and 2 on the same sheet. In the Office Action, it was pointed out that, if Figs. 1 and 2, were separated in printing, it would be unclear what the symbol " $\partial$ " represents. As such, Figs. 1 and 2 have been amended to each include the symbol " $\partial$ ". Included herewith is a new sheet showing the amended Figs. 1 and 2. Applicant has additionally included a redlined sheet showing the changes made to Figs. 1 and 2.

Additionally, Fig. 4 has been added to the present application. A new sheet including Fig. 4 is enclosed.

Attachment:      Two (2) Replacement Sheets  
                         One (1) Annotated Sheet Showing Changes